

Date: Sun, 20 Feb 94 08:31:17 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V94 #184
To: Info-Hams

Info-Hams Digest Sun, 20 Feb 94 Volume 94 : Issue 184

Today's Topics:

 Daily Summary of Solar Geophysical Activity for 17 February
 FCC Digest
 Hamblaster Update
 HAM WANNABE (2 msgs)
 Medium range point-to-point digital links
 Mobile Server
 Policy and Procedure in Bahama Islands ..
 Repeaters
 RF Power Amp stages, design. Help needed!
 Scandinavian Repeaters

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Fri, 18 Feb 1994 03:32:58 MST
From: agate!library.ucla.edu!news.mic.ucla.edu!unixg.ubc.ca!kakwa.ucs.ualberta.ca!
quartz.ucs.ualberta.ca!alberta!adec23!ve6mgs!usenet@ames.arpa
Subject: Daily Summary of Solar Geophysical Activity for 17 February
To: info-hams@ucsd.edu

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DAILY SUMMARY OF SOLAR GEOPHYSICAL ACT

17 FEBRUARY, 1994

/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\

(Based In-Part On SESC Observational Data)

SOLAR AND GEOPHYSICAL ACT

!!BEGIN!! (1.0) S.T.D. Solar Geophysical Data Broadcast for DAY 048, 02/17/94
10.7 FLUX=106.4 90-AVG=106 SSN=067 BKI=2233 2310 BAI=008
BGND-XRAY=B2.2 FLU1=1.8E+06 FLU10=1.2E+04 PKI=2233 2222 PAI=008
BOU-DEV=011,015,035,024,019,027,008,003 DEV-AVG=017 NT SWF=00:000
XRAY-MAX= C1.7 @ 1109UT XRAY-MIN= B2.0 @ 0535UT XRAY-AVG= B3.1
NEUTN-MAX= +002% @ 2330UT NEUTN-MIN= -001% @ 2145UT NEUTN-AVG= +0.2%
PCA-MAX= +0.1DB @ 0135UT PCA-MIN= -0.2DB @ 1125UT PCA-AVG= -0.0DB
BOUTF-MAX=55344NT @ 0241UT BOUTF-MIN=55321NT @ 2025UT BOUTF-AVG=55335NT
GOES7-MAX=P:+000NT@ 0000UT GOES7-MIN=N:+000NT@ 0000UT G7-AVG=+071,+000,+000
GOES6-MAX=P:+127NT@ 1526UT GOES6-MIN=N:-063NT@ 0730UT G6-AVG=+094,+037,-026
FLUXFCST=STD:110,110,110;SESC:110,110,110 BAI/PAI-FCST=018,015,010/018,018,012
KFCST=3332 2111 0005 5010 27DAY-AP=007,007 27DAY-KP=2311 1232 3212 2122
WARNINGS=
ALERTS=
!!END-DATA!!

NOTE: The Effective Sunspot Number for 16 FEB 94 was 42.0.
The Full Kp Indices for 16 FEB 94 are: 3+ 4o 3- 3- 3+ 3o 3- 2+
The 3-Hr Ap Indices for 16 FEB 94 are: 20 29 13 12 20 15 12 9
Greater than 2 MeV Electron Fluence for 17 FEB is: 4.1E+08

SYNOPSIS OF ACT

Solar activity was low. A C1 x-ray event occurred at 17/1111Z which was optically uncorrelated. A new region was assigned today as Region 7673 (N06W48).

Solar activity forecast: solar activity is expected to be low.

The geomagnetic field has been at quiet to unsettled levels for the past 24 hours at mid-latitudes. Some active conditions were experienced at high-latitudes during the period.

Geophysical activity forecast: the geomagnetic field is expected to be active the first day of the forecast. This is due to the passage of a coronal hole. The second day of the forecast should be unsettled to active with unsettled conditions

at the end of the period.

Event probabilities 18 feb-20 feb

Class M	10/10/10
Class X	01/01/01
Proton	01/01/01
PCAF	Green

Geomagnetic activity probabilities 18 feb-20 feb

A. Middle Latitudes	
Active	30/25/20
Minor Storm	25/15/10
Major-Severe Storm	05/05/01
B. High Latitudes	
Active	30/25/25
Minor Storm	30/15/15
Major-Severe Storm	05/05/05

HF propagation conditions were near-normal for low and middle latitude paths. High and polar latitude paths also showed near-normal propagation except during the local night sectors where residual degradation continues to sporadically linger. Conditions may become slightly more unstable on 18 or 19 February due to effects from the above-noted coronal hole.

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REGIONS WIT

NMBR	LOCATION	LO	AREA	Z	LL	NN	MAG	TYPE
7668	N06W66	281	0010	AXX	02	003	ALPHA	
7669	N10E03	212	0010	AXX	00	001	ALPHA	
7670	N12E12	203	0020	BX0	07	005	BET	
7671	N13E26	189	0420	CH0	08	005	BET	
7673	N07W49	264	0030	BX0	03	003	BET	
7672	N03E15	200					PLAGE	

REGIONS DUE TO RET

NMBR LAT

7663 N13 89

LISTING OF SOLAR ENERGETIC EVENTS FOR 17 FEBRUARY, 1994

BEGIN MAX END RGN LOC XRAY OP 245MHZ 10CM SWEEP
NONE

POSSIBLE CORONAL MASS EJECTION EVENTS FOR 17 FEBRUARY, 1994

BEGIN MAX END LOCATION TYPE SIZE DUR II IV
NO EVENTS OBSERVED

INFERRED CORONAL HOLES. LOCATIONS VALID AT 17/2400Z

ISOLATED HOLES AND POLAR EXT
EAST SOUTH WEST NORTH CAR TYPE POL AREA OBSN
NO DAT

SUMMARY OF FLARE EVENTS FOR THE PREVIOUS UTC DAY

Date Begin Max End Xray Op Region Locn 2695 MHz 8800 MHz 15.4 GHz

16 Feb: 0054 0059 0104 B3.6
1106 1112 1125 B6.2
1502 1509 1514 B5.6 SF 7670 N07E25
1911 1912 1915 SF 7668 N10W51

REGION FLARE STATISTICS FOR THE PREVIOUS UTC DAY

C M X S 1 2 3 4 Total (%)
-- -- -- -- --
Region 7668: 0 0 0 1 0 0 0 0 001 (25.0)
Region 7670: 0 0 0 1 0 0 0 0 001 (25.0)
Uncorrelated: 0 0 0 0 0 0 0 0 002 (50.0)

Total Events: 004 optical and x-ray.

EVENTS WIT

Date Begin Max End Xray Op Region Locn Sweeps/Optical Observations

NO EVENTS OBSERVED.

NOTES:

All times are in Universal Time (UT). Characters preceding begin, max, and end times are defined as: B = Before, U = Uncertain, A = After. All times associated with x-ray flares (ex. flares which produce associated x-ray bursts) refer to the begin, max, and end times of the x-rays. Flares which are not associated with x-ray signatures use the optical observations to determine the begin, max, and end times.

Acronyms used to identify sweeps and optical phenomena include:

II	= Type II Sweep Frequency Event
III	= Type III Sweep
IV	= Type IV Sweep
V	= Type V Sweep
Continuum	= Continuum Radio Event
Loop	= Loop Prominence System,
Spray	= Limb Spray,
Surge	= Bright Limb Surge,
EPL	= Eruptive Prominence on the Limb.

** End of Daily Report **

Date: 20 Feb 94 14:47:37 GMT
From: agate!news.Brown.EDU!noc.near.net!news.delphi.com!BIX.com!
aog@network.ucsd.edu
Subject: FCC Digest
To: info-hams@ucsd.edu

I'll 'third' it.

I much appreciate the posting of info on the Commission's actions to the net. I'll grant that some of it is not ham.radio specific, but the overview is much needed by folks here.

Date: Tue, 15 Feb 1994 18:40:50 GMT
From: amiserv!vpnet!tellab5!jwa@uunet.uu.net
Subject: Hamblaster Update
To: info-hams@ucsd.edu

2-15-94

I hope that this will clear up a few questions about the Hamblaster.

Several weeks ago I mentioned that the projected cost for the board would be about \$350.00. Well, it was just a "guesstimate"! It appears that it will be more in the \$275.00 range and could be as low as \$250.00. This may still sound high compared to the Soundblaster or other sound cards, but you have to remember that it's made exclusively for Ham Radio. Willco may only sell a few hundred a month. They can't compete with companies that sell over a million units a year.

The Hamblaster is not a software package. It requires a special sound card that uses a Texas Instruments TMS320C25 DSP to run filters or audio demodulators. It can interface to a TNC via a TTL digital port and replace the TNC's poor filtering.

It's not compatible with other sound cards and it can co-exist with them. I use my Soundblaster Pro and Hamblaster together. I can, for example, run a filter on the the Hamblaster, connect it's output the Soundblaster and record a CW signal using the SB software under the Windows environment.

More "info"

1) External Power supply

I think one feature that separates the Hamblaster from other sound boards is it's ability to run on an external 12 volt supply. When a filter or modem is loaded, you can turn off the computer and it will stay active.

When it's connected to a PK-232, there's no need to leave the computer on in order to keep the DSP alive. Right now, my PK232/Hamblaster is runing and it's been operating for about two weeks.

There still some developement work being done and I'm told that the power supply will be on a small PC board and sold as an option for about \$20.00.

2) Adaptive (LMS) filter

There's ongoing developement in this area. We are planing (I don't think this has been done before) to add controls to the LMS algorithm.

3) Soundblaster incompatibility

As I said before,
The Hamblaster IS NOT soundblaster compatible.
It was designed that way so that it will run
independant of other sound boards. I can still
use my Soundblater to record sound, play music,
load software from the CD or use the MIDI interface.

Jack Albert WA9FVP	Fellow Radio Hacker
Tele (708) 378-6201	
Tellabs Operations, Inc.	FAX (708) 378-6721
1000 Remington Blvd.	jwa@tellabs.com
Bolingbrook, IL 60440	

Why do they call them concetration camps?
When people go there, do they really concentrate?

Date: Sun, 20 Feb 94 09:01:55 -0500
From: yale.edu!noc.near.net!news.delphi.com!usenet@yale.arpa
Subject: HAM WANNABE
To: info-hams@ucsd.edu

Brian Copeland <copie@crl.com> writes:

>I've always wanted to get into HAM radio. How do I start? What do I need
>to do?

Call the American Radio Relay League at 203-666-1541 and ask for a
"prospective ham package", and/or buy the book "Now You're Talking",
published by the ARRL, either through them or at Radio Shack.
Address of ARRL: 225 Main St, Newington, CT 06111

John Kent/AA2DY
jokent@delphi.com

Date: 20 Feb 94 14:50:55 GMT
From: agate!howland.reston.ans.net!noc.near.net!news.delphi.com!BIX.com!
arog@network.ucsd.edu

Subject: HAM WANNABE
To: info-hams@ucsd.edu

copie@crl.com (Brian Copeland) writes:

>I've always wanted to get into HAM radio. How do I start? What do I need
>to do?

In addition to the phone call, Luck Herder hangs out a number
of places... including BIX. If you send him e-mail as

arrrl@BIX.com

asking for info on ham radio classes and exams in your
area, I'm sure that he'll send it out snail.mail.

You'll need to give him, in that note, your postal address
and the zip-code for the area that you want the info for...
if its different from the one that you get you us.mail in.
(like, you if you want someplace that is close to work so
that you can head for a class after work... before trying
to get home.)

.....
Alan Ogden W6SPK
Moderator of ham.radio at BIX
arog@BIX.com

Date: Sun, 20 Feb 1994 14:56:23 GMT
From: sgiblab!swrinde!gatech!wa4mei.ping.com!ke4zv!gary@ames.arpa
Subject: Medium range point-to-point digital links
To: info-hams@ucsd.edu

In article <CLFt40.Cq0@srgenprp.sr.hp.com> glenne@sad.hp.com (Glenn Elmore)
writes:

>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

>: of sight. Finally, the bulk of the path loss occurs in the first
>: mile, 119.27 db at 13 GHz. After that the incremental losses are
>: rather small, another 3 db for every doubling of distance.

>

>Wow! I stand corrected. Things must work differently where you are.
>The darn signals drop 6 dB when you double the distance out here in
>California. This happens every time you double it, the second mile or
>the second hundred (or pretty close to it up through 10 GHz) as long as
>you're LOS.

Arrgh, I knew that. Signal drops with the **square** of distance, so it's 6 db per doubling. The 119 db figure is correct though. The biggest loss happens in that first mile.

>: a 40 foot mast. So pure LOS is pretty much a mountaintop to mountaintop affair for longer distances.

>

>Yes it is unless a lot more path engineering is done than amateurs are used to doing. However, if we are ever to get high information rate systems we are going to **have** to pay attention to details. Once we do this, those details will be made more economic as we use microwave/millimeter (if all of amateur radio hasn't been scooped by fiber by then) wavelengths.

I think that my point here is that LOS paths aren't practical for most amateur data links. The ability to get LOS paths is very terrain specific, and very \$\$\$ specific. They either require fortuitous high sites, or very expensive microwave towers.

>: > While it's true that you would need line-of-sight, I think most >: >practical installations of a lower frequency system also incur >: >15-40 dB incremental path loss once they leave LOS conditions and >: >for higher information rate transmission effectively need LOS in order >: >to stay economic.

>

>: Well lets look at a 219 MHz system with a 11 db antenna at 40 feet

>

>I'm discussing higher speed systems. Links of the type required to >trunk a significant number of users with moderate to high bandwidth >applications across the US. 1 MHz at 219 is not going to be >able to support such without a tremendous amount of spacial reuse >which probably means antennas so large as to be impractical.

I agree it isn't practical to get multi-megabit systems below the microwave frequencies. What I think you're overlooking is the physical and financial impossibility of building the number of short hops that LOS requires in most of the country in order to do the higher rate channels. Amateurs can't do like the phone company and put up million dollar relay sites every 15-30 miles. The expense isn't in the equipment, it's in the **sites**. Amateurs don't have eminent domain, or the financial resources of a major public utility. Amateurs are going to have to accept lower data rates in order to stretch out the distance between available sites enough to make the system practical.

>: That gives us a margin of 95.87 db. Looks like we can easily tolerate >: 15-40 db of foliage and building loss in the path. For the same path, >: it looks like foliage losses at 10 GHz are about 30 db more, for a >: total of about 198 db at 10 GHz, or about 20 db below your system's

>: noise floor worst case.

>

>Yes, if you don't need much performance you can use lower frequencies,
>you can lose a lot of the *potential* performance and still function.
>For that matter you can run 60 wpm rtty on HF across great distances if
>that's your goal.

Yes, 60 WPM RTTY has been within *individual* amateur reach for a long time. But we can do better. With a *lot* of cooperation and group effort, we should be able to do a 56 kb national network of 300-500 sites. We can't possibly do the 3000-5000 sites needed for national microwave linking. (The California coast, and a few other fortunate areas with access to strategically located mountains overlooking high amateur population density areas, may be able to do that, but not the rest of the country.)

> My point is that once you try to get economical performance at high
>information rates you can't afford to throw away power into poorly
>engineered paths and that the economics greatly favor microwave over vhf
>for wireless systems.

Power is cheap. Sites are few and expensive. We have to be able to use the sites *we can get* to build the network. Unlike a public utility, we can't just go out and condemn ideal sites where we need them for our microwave links. All of our path engineering has to revolve around what we can do with the sites we can get.

>: >Also, at high information rates, the additional multipath and path :
>: >variability problems incurred by going to a non-LOS path make the UHF :
>: >solution even less attractive since error correction, channel equalization
>: >and additional system margin may be required to guarantee data flow.

>

>: Ok. Lets take a look at beyond horizon signals. If we assume forward
>

>Let's not. Once you've done that you have thrown away so much system
>capability that it is beyond amateur resources. I don't think
>most of us are ready to install multi-killiwatt troposcatter systems
>of the kind the military used at low vhf to island hop in the Pacific.
>And that's about what it takes if you are talking about medium speed
>information (though I suspect the military stuff was more or less audio
>bandwidths).

The link budget calc I did showed that a 90 mile forward scatter path has a path loss of 198 db at 219 MHz for a 56 kb bandwidth. That's doable with ordinary amateur beams and brick amplifiers, given the sensitivity of existing RF modems.

>: Now back to the real world. We have a 90 mile 70 cm path between Sweat
>: Mtn and Scaly Mtn that is not line of sight. It works with very few

>: retries. We're using 19 db antennas on each end, and our mean HAAT is
>: about 1300 feet, but with mountains taller than that in between. I won't
>: claim that's typical. We've got another link that's only 21 miles,
>: and line of sight, that doesn't work well. But one end is nestled
>: in downtown buildings and suffers severe multipath (and desense from
>: commercial equipment too). The tighter beamwidth of your system would
>: probably be a win here.
>
> Your second 21 mile link obviously *isn't* LOS!

Yes it is. We can *see* the antennas at each end.

>Local clutter is probably degrading things severely.
>Antennas help a lot (2 dB of system improvement per dB of antenna gain)
>but a poor path degrades things much faster than antennas can fix it.
> That "nestled end" that you call line-of-sight is clearly far from it.
>See my comment above about most practical links losing 15-40 dB as
>soon as they leave LOS. Your link is probably an example of this.

The problem we have is severe multipath because the beamwidth of our antennas illuminates buildings on either side of the path. That same path *does* work at 7 GHz because we have a commercial link there using 6 foot dishes at each end that does not suffer multipath. The narrower beam doesn't illuminate the multipath generating reflectors.

>: To summarize, if we could depend on having LOS paths, a 10 GHz system
>: would be ideal, but in the real world we probably can't afford the
>: number of hops that would require (except in special terrain cases
>: like the California coast with it's mountains overlooking the population
>: areas), and 219 MHz calculations seem to show it will suffice using
>: troposcatter over the much longer paths we are likely to need in our
>: rolling terrain.
>

>If we are willing to settle for low information rate to each user I
>agree. However, if we are considering medium speed or greater, as
>defined by the industry, culture and available systems, and if we are
>considering more than a single or a few users, 219 MHz capacity isn't
>going to come close to being enough to interest hams and potential
>hams in "investing". Even now it is difficult to convince people
>that ham radio is neat for information age services when a 14.4 kbps
>or 28.8 kbps modem is so cheap and provides so much performance
>*to the user* compared to anything AR has to offer.

Well I agree we can't compete with the phone company. Their resources are vastly greater than anything we could muster. But we can do a *lot* better than 1200 baud for our users. And *that* horribly slow speed has been enough to interest 20% of our ham population sufficiently to make packet their primary operating mode, and has been enough to get hundreds

of high site nodes and digis installed around the country. With those sites in hand, we can do a pretty good job of upgrading the network to 56 kb. That's a 47 times improvement over what we've got. We can do that for about \$8 each per year from active packeteers, and a lot of volunteer labor.

The highest traffic flows are on the user MANs. In some cases where local topographic conditions permit, those MANs could be shifted to higher speed. But for the intercity trunks, I don't think we can do megabit microwave trunks nationwide. There are just too many miles where there are no hams, and no suitable sites for the asking. Current inter-MAN traffic demand doesn't justify it even if we could do it, but I suspect that "build it and they will come" would be in effect if we could possibly do it. I just don't see any way we could get the sites. Even if the telcos *gave* us their old microwave sites, I don't think we could find the manpower to maintain them.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Sun, 20 Feb 1994 11:10:03 GMT
From: netcon!hatch!pro-palmtree!pro-janin!jestevez@locus.ucla.edu
Subject: Mobile Server
To: info-hams@ucsd.edu

Remote Server Commands =====

Server commands are specified in the Subject line of regular mail messages addressed to server@pro-janin.cts.com (where amateur mobile operators request information). The request commands are:

HELP Send server help file
INDEX [dir] Send server index for the given [dir] hierarchy
SEND [dir/]file Send file (or one in the named subdirectory)
DIR [dir] Send server directory for the given [dir] hierarchy

(Items in [brackets] are optional; do not enter the brackets).

Examples:

Subject: help [Sends the help file]

In article <2k44m8\$sag@mary.iaa.org> gsa@iaa.org (W. Robert Nelson) writes:
>Would someone please give me some general information about mobile ham
>radio, and repeaters, or point me to an FAQ. Specifically, I would like
>to know...

>

>- Can mobile amateur radio stations operate in full duplex?

Yes. It requires an in-car duplexer to do it in the same band, but crossband is easy.

>- Can repeaters in fact be used to place local telephone calls? If so,
> is there a charge for this service? Is it limited?

Yes. Phone patches are a regular part of many repeater systems, not full duplex however. The clubs that support these repeaters generally want you to join if you make regular use of their machine. Dues costs per year run \$20 and up for typical clubs. There are limits placed on phone patches by the third party and non-commercial rules of amateur radio.

>- What are the legal restrictions on amateur radio traffic? Are data
> connections allowed?

Amateur radio can't be used for your regular business communications. There are language content restrictions. And third party rules apply. The latter basically eliminate "reverse autopatch" where incoming phone calls control the repeater transmitter. That's because there's usually no way to assure that the incoming call is under the control of a licensed amateur. Basically, autopatch usage should be considered "out dial" only. Amateur data transmissions are allowed, though that's generally not done through phone patch links. That's for a couple of reasons. First the phone patches were put up for voice use by their owners, so that's what they want them used for, and second because the patches are generally half duplex, so normal telco modems don't work. Generally, amateur data transmission is done on a separate network of nodes via packet transmission. The same content and third party restrictions apply to packet as to phone patches.

>- What baud rate could I reliably connect at through a radio link?

The majority of the existing packet network is at 1200 baud, with some nodes operating at 2400 or 9600 baud, and even a few at 19.2 kb. There are faster systems, but they aren't yet in widespread use. There are some networks running at 56 kb, and there are experimental systems at megabaud+. There's also a long haul HF network operating at 300 baud. Since packet is store and forward at the packet level, and since there are many "bbs" systems on the network that can do store and forward on the message level, You can send Email over national and international distances, but applications requiring high real time throughput are

limited to the local area for the most part because of the low throughput of multihop packet transmissions over the existing node network.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Sun, 20 Feb 1994 15:33:45 GMT

From: elroy.jpl.nasa.gov!swrinde!gatech!wa4mei.ping.com!ke4zv!gary@ames.arpa

Subject: RF Power Amp stages, design. Help needed!

To: info-hams@ucsd.edu

In article <1994Feb19.123710.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:

>Hi,

>

> I'd like to know what considerations are required to modify an existing HF RF Power stage to a higher power without needing
>to actually build a separate HF linear amp. Specifically I'd like to know if it is possible to drop a different transistor into
>place and change the current limiting resistor of the final stage, provided the transistor is carefully selected, and get an
>increased power output?

Well it's usually not quite that simple. Sure it's possible to modify an existing PA to output more power. But the key things are impedance matching and drive levels when changing out the PA transistor for a higher power one. The output impedance of a power transistor is a function of the circuit load line. That in turn is a function of stage voltage, usually fixed at 13.8 volts for typical mobile equipment, and stage output current, a function of drive and transistor beta. So, with the voltage fixed, you have to generate more output current to make more power. $R=E/I$ so more current means a lower output impedance. That in turn means modifications to the output matching network to translate that impedance to 50 ohms.

In fixed equipment, it's often possible to go to a higher supply voltage, say double that of the original stage, and if the transistor beta and drive level are sufficient to also double current output, then your load impedance can remain the same, and the output matching network doesn't have to be modified while your power has increased fourfold. Note however, that input impedance to the active device will also often be different after you change devices, and that has to be matched as well.

>Another thing about transistor selection, will a VHF transistor work well in a HF

circuit?

Device gain usually doubles for every octave reduction in operating frequency. VHF transistors can have so much gain at HF that stage stability can be hard to achieve. Other than that, for Class C operation, use of VHF rated transistors in HF circuits is doable. You do have to watch out somewhat more carefully for VHF parasitics. Most VHF transistors are not rated for linear operation, so Class AB1 or B uses may have higher levels of distortion products than a device designed for HF linear service.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 20 Feb 1994 17:27:03 +0200
From: agate!howland.reston.ans.net!pipex!sunic!news.funet.fi!news.cc.tut.fi!
lehtori.cc.tut.fi!not-for-mail@ames.arpa
Subject: Scandinavian Repeaters
To: info-hams@ucsd.edu

David Dodell (david@stat.com) wrote:

> I will be taking a trip to Scandanavia in the near future ... can anyone
> fill me in on the VHF/UHF repeater situation?

Here is the band plan for Finland and as far as I know this should apply
to other Scandinavian countries too.

145.200 - 145.575 FM-simplex, 145.500 is the calling frequency
145.600 - 145.775 Repeater outputs, inputs at -600 kHz.

433.400 - 433.575 FM-simplex, 433.500 is the calling frequency
434.600 - 434.975 Repeater outputs at -1.6 MHz

1297.000 - 1297.475 Repeater outputs, inputs at -6 MHz
1297.500 - 1298.000 FM-simplex, 1297.500 is the calling frequency

All channels are at 25 kHz steps.
A 1750 Hz tone is required to initially open the repeater.

Paul OH3LWR

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From: agate!howland.reston.ans.net!wupost!csus.edu!netcom.com!joe@ames.arpa
To: info-hams@ucsd.edu

References <9402141902.A9592wk@t8000.cuc.ab.ca>, <2jr0tm\$ree\$1@rosebud.ncd.com>,
<2k3a1i\$b3q@ornews.intel.com>p
Subject : Re: CELLULAR SURVEILLANCE

This outfit in Millwaukee has several versions of the monitor - at prices ranging from \$250 to \$400 (approx). Mark is a very sharp individual and keeps his product totally legal. He DOES FILTER the specific unit addresses (called NAM I believe) and can turn it on in software with a signed letter from authorities.

--Joe

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End of Info-Hams Digest V94 #184

